

Appl. No. 10/710,512
Response dated 12/30/2005
Reply to Office Action of 9/30/2005

AMENDMENTS TO SPECIFICATION

Please replace the Abstract with the following paragraph:

An angled axis machine vision system having a camera system angled with respect to an axis of the coordinate system of the environment. This configuration has all of the advantages of the horizontal alignment between the two cameras while eliminating the inherent problem of utilizing horizontal and vertical lines in an environment for distance calculations when the horizontal and vertical lines are parallel or close to parallel to an axis lying between camera centers of the camera system. With the camera centers angled about the roll axis, horizontal and vertical lines in the environment appear as angled lines in images taken from the cameras enabling more accurate distance calculations. With the camera centers angled downward about the pitch axis objects that are near are more readily observed. With angled axis rotation it is still possible for lines in the environment to be parallel to the axis defined between the camera centers, but these instances are rarer than horizontal or vertical lines in real world environments. The camera mount may be rotatably mounted to a support wherein two sets of pictures from each of the cameras may either be utilized and in this case the two sets are compared for the number of lines which are parallel to the axis of the camera centers and the set of pictures with the least lines parallel is used for distance calculations. In addition, the two sets may be utilized to correlate the distances derived from each set of pictures. An angled axis machine vision system having two cameras angled with respect to roll axis. Provides advantages of horizontal alignment between two cameras and eliminates problem of utilizing horizontal/vertical lines in the environment for distance calculations when lines are parallel or close to parallel to axis between camera centers. With camera centers angled about roll axis, horizontal/vertical lines in environment appear angled with respect to horizon, enabling accurate distance calculations. With the cameras angled about roll, lines in the environment may line up parallel to the axis between camera centers, but these instances are rare in real world environments. May be rotatably mounted in the roll axis wherein two sets of pictures from each of the cameras may either be utilized; the two sets compared for the number of parallel lines parallel to axis between camera centers and the set of pictures with least parallel lines used for distance calculations.